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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,516	12/03/2003	Mikko Huttunen	60091.00267	5609
32294	7590	09/12/2005	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			LOFTIN, CELESTE	
			ART UNIT	PAPER NUMBER
			2686	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/725,516	Applicant(s) HUTTUNEN, MIKKO	
	Examiner Celeste L. Loftin	Art Unit 2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/03/2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1-3, 5-9, 11-14 and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Schmutz, **US Patent 6,253,094**.

Regarding claim 1, Schmutz discloses a reception method in a radio system comprising at least two receivers (reads on the duplexers supply the received signals to the respective transceiver units) (**col. 5 line 44-45**) comprising a radio part and a

Art Unit: 2686

baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP unit (baseband part)) (**col. 4 line 67 and col. 5 line 1-5**), each receiver using a dedicated (reads on duplexer isolates the respective transmit and receive paths) (**col. 3 line 61-62**) narrowband channel (reads on supply processed ones of the narrowband communication channels) (**col.4 34-35**), the method comprising:

receiving, by the radio part (i.e. wideband receiver) (**col. 5 line 1**) of each receiver, the narrowband channel used by the receiver from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) (**col. 5 lines 28-31**);

forwarding the received narrowband channel from the radio part of the receiver to the baseband part for further processing (the receiver receives the signal, the duplexer isolates it and then send it to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines 18-23**);

receiving, by the radio part of at least one receiver, in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) (**col. 5 lines 18-23**) used by the receiver, at least one narrowband channel other than that used by the receiver from the radio path (a receiver receives broadband RF signals from subscribers via antennas)(**col. 3 lines 59-61**); and

forwarding said at least one other narrowband channel from the radio part of said at least one receiver to the baseband part of at least one other receiver using said

other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines18-23**).

Regarding claim 2, Schmutz discloses the method of claim 1, the method comprising:

receiving each narrowband channel used by the system receivers from the radio path by the radio part of at least one receiver (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines18-23**); and

forwarding each received narrowband channel from the radio part of said at least one receiver to the baseband part of the receiver using the channel in question for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) (**col. 4 lines 59-63 and col. 5 lines18-27**).

Regarding claim 3, Schmutz disclose the method of claim 1, wherein said further processing of the narrowband channel in the baseband part comprises channel demodulation (reads on each of the digital receivers (DSP) demodulates the signals) (**col.5 lines 24-26**).

Regarding claim 5, Schumutz discloses the method of claim 1, the method further comprising:

combining the narrowband channels for further processing in the baseband part of the receiver when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) **(col. 4 lines 39-42)**.

Regarding claim 6, Schmutz discloses the method of claim 1, the method further comprising:

selecting the best narrowband channel for further processing in the baseband part of the receiver when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) **(col. 4 lines 32-33)**.

Regarding claim 7, Schmutz discloses a radio system comprising:

at least two receivers (reads on the duplexers supply the received signals to the respective transceiver units) **(col. 5 line 44-45)** comprising a radio part and a baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP unit (baseband part)) **(col. 4 line 67 and col. 5 line 1-5)**, each receiver being configured to use a dedicated (reads on duplexer isolates the respective transmit and receive paths) **(col. 3 line 61-62)** narrowband channel (reads on supply processed ones of the

Art Unit: 2686

narrowband communication channels) (**col.4 34-35**), and the radio part of each receiver being configured to receive the narrowband channel used by the receiver from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) (**col. 5 lines 28-31**) and to forward the received narrowband channel to the baseband part of the receiver for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines18-23**), wherein

the radio part (i.e. wideband receiver) (**col. 5 line 1**) of at least one receiver is configured to receive in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) (**col. 5 lines18-23**) used by the receiver, at least one other narrowband channel in addition to the channel used by the receiver from the radio path (a receiver receives broadband RF signals from subscribers via antennas) (**col. 3 lines 59-61 and Figure 2B**), the system further comprising:

transmission means (from the channelizer the signals are fed to the DSP units) (**col. 5 22-23**) for forwarding said at least one other narrowband channel from the radio part of said at least one receiver to the baseband part of at least one other receiver using said other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer

extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines 18-23**).

Regarding claim 8, Schmutz discloses the system of claim 7, wherein the radio part of at least one receiver is adapted to receive each narrowband channel used by the system receivers from the radio path processing (the receiver receives the signal, the duplexer isolates it and then send it to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) (**col. 4 lines 59-63 and col. 5 lines 18-27**), the system further comprising:

transmission means (from the channelizer the signals are fed to the DSP units) (**col. 5 22-23**) for forwarding each of said narrowband channels from the radio part of said at least one receiver to the baseband part of the receiver using said channel for further processing (the receiver receives the signal, the duplexer isolates it and then send it to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) (**col. 4 lines 59-63 and col. 5 lines 18-27**).

Regarding claim 9, Schmutz discloses the system of claim 7, wherein said further processing of the narrowband channel in the baseband part comprises channel demodulation (reads on each of the digital receivers (DSP) demodulates the signals) (**col. 5 lines 24-26**).

Regarding claim 11, Schmutz discloses the system of claim 7, wherein the baseband part of the receiver is configured to combine the narrowband channels for further processing when two or more narrowband channels received via different paths

are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) **(col. 4 lines 39-42)**.

Regarding claim 12, Schmutz disclose the system of claim 7, wherein the baseband part of the receiver is configured to select the best narrowband channel for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) **(col. 4 lines 32-33)**.

Regarding claim 13, Schmutz discloses a receiver in a radio system comprising at least two receivers (reads on the duplexers supply the received signals to the respective transceiver units) **(col. 5 line 44-45)** comprising a radio part and a baseband part (the transceiver is housed in the receiver sections that is composed of a wideband receiver, A/D converter, an I/Q translator, FFT based channelizer and a DSP unit (baseband part)) **(col. 4 line 67 and col. 5 line 1-5)**, each receiver being configured to use a dedicated (reads on duplexer isolates the respective transmit and receive paths) **(col. 3 line 61-62)** narrowband channel (reads on supply processed ones of the narrowband communication channels) **(col.4 34-35)**, and the radio part of the receiver being configured to receive the narrowband channel used by the receiver from the radio path (the output of the receiver is down converted and sent to the channelizer, the channelizer extracts narrowband signals respective to those received by the receiver and sends them to the DSP) **(col. 5 lines 28-31)** and to forward the received

narrowband channel to the baseband part of the receiver for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines18-23**), wherein:

the radio part (i.e. wideband receiver) (**col. 5 line 1**) of the receiver is configured to receive in addition to the narrowband channel (the channelizer extracts narrowband signals respective to those received by the receiver) (**col. 5 lines18-23**) used by the receiver, at least one other narrowband channel in addition to the channel used by the receiver from the radio path (a receiver receives broadband RF signals from subscribers via antennas) (**col. 3 lines 59-61 and Figure 2B**); and

the receiver is configured to forward said at least one other narrowband channel from the radio part of the receiver to the baseband part of at least one other radio system receiver using said other narrowband channel for further processing (the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP) (**col. 4 lines 59-63 and col. 5 lines18-23**).

Regarding claim 14, Schmutz discloses the receiver of claim 13, wherein the wideband radio part (i.e. wideband receiver) (**col. 5 line 1**) of the receiver is configured to receive each narrowband channel used by the radio system receivers from the radio path the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) (**col. 4 lines 59-63 and col. 5 lines18-27**) and

to forward each of said narrowband channels from the radio part of the receiver to the baseband part of the other receiver using said channel for further processing the receiver receives the signal, the duplexer isolates it and then send sit to the channelizer, the channelizer extracts narrowband channel signals and send them to the DSP, where the signal is demodulated) (**col. 4 lines 59-63 and col. 5 lines18-27**).

Regarding claim 16, Schmutz discloses the receiver of claim 7, wherein the baseband part of the receiver is configured to combine the narrowband channels for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the combined signal represents the contents of a wideband signal which is a composite of respective narrowband signal channels) (**col. 4 lines 39-42**).

Regarding claim 17, Schmutz discloses the receiver of claim 7, wherein the baseband part of the receiver is configured to select the best narrowband channel for further processing when two or more narrowband channels received via different paths are forwarded to the baseband part (reads on the DSP units modulate and perform pre-transmission error correction on respective ones of the plurality of incoming signals) (**col. 4 lines 32-33**).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmutz, **US Patent 6,253,094** in view of Anderson et al. (Anderson) **US Patent 6,400,966**.

Regarding claim 4, Schmutz discloses the method of claim 1, but fails to disclose wherein at least one of the receivers comprises at least two radio parts.

In a similar field of endeavor, Anderson discloses wherein at least one of the receivers comprises at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) (**col. 6 lines 1-2**).

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include at least one of the receivers comprises at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Regarding claim 10, Schmutz discloses the system of claim 7, but fails to disclose wherein at least one receiver comprises at least two radio parts.

In a similar field of endeavor, Anderson discloses wherein at least one receiver comprises at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) (**col. 6 lines 1-2**).

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include at least one receiver comprises at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Regarding claim 15, Schmutz discloses the receiver of claim 13, but fails to disclose the receiver comprising at least two radio parts.

In a similar field of endeavor, Anderson discloses the receiver comprising at least two radio parts (reads on the receiver unit can simultaneously receive signals from different sectors (1 to N) of the RF/sector unit) (**col. 6 lines 1-2**).

At the time of invention it would have been obvious to one of ordinary skill in the art to further modify Schmutz to include the receiver comprising at least two radio parts. Motivation for this modification is expand the capacity of one receiver servicing the sector.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Celeste L. Loftin whose telephone number is 571-272-2842. The examiner can normally be reached on Monday thru Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2686

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CL


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REGISTERED EXAMINER